SENATE SELECT COMMITTEE
FLOOD CONTROL, NAVIGATION AND COASTAL EROSION

DOTD is the agency responsible for coordinating the State's water resources development activities related to drainage, flood control, hurricane protection and navigation. As such, we work closely with levee and drainage districts, local units of government, shipping and towing organizations and port authorities and we are pretty much in tune with their interests and concerns.

I was asked to brief you on the various types of infrastructure these interests have in place in the coastal area; why that infrastructure is there and why it needs to remain; and what we are planning for the future.

Without doubt, our coastal marshes are a very important and valuable natural resource. But, in the "big picture" context, Louisiana has been blessed with an abundance of natural resources – fertile farm lands, oil and natural gas deposits, the Mississippi River which provides a water connection to America's heartland, and, of course, one of the world's most productive coastal estuaries.

But for Louisiana to reap all these benefits, its citizens had to adapt to living with the constant threat of devastating floods. From the earliest days of the Colonial Period flood control and levees have been a way of life in Louisiana. Today, approximately 1/3 of Louisiana is suitable for year-round habitation only because of the extensive levee system we have in place (1500 miles of riverine levees plus an almost equal amount of hurricane protection levees and local back levees). Concentrated behind these levees are the vast majority of our urban centers, petro-chemical complexes, and major ports. Nearly 75% of the population lives and works in these protected areas and produces more than 90% of the State's disposable personal income. Approximately 60% of the State's agricultural products are produced in these same areas.

Commercial navigation has made Louisiana a major player in the global maritime commerce marketplace. Today, the deepwater channel portion of the Mississippi River, extending 230 miles from the Gulf of Mexico up to Baton Rouge, constitutes the largest port complex in the world (bigger than Rotterdam or Singapore). Louisiana has the highest volume of waterborne

traffic in the nation – almost 500 million tons shipped and received. Louisiana's maritime industry contributes significantly to the state's overall economic base, accounting for 22.5% of the total Louisiana gross state product. This economic activity supports, directly and indirectly, approximately 1 out of every 8 jobs in Louisiana – that amounts to almost 244,000 jobs.

The availability of this low cost, environmentally friendly, waterborne transportation system allowed Louisiana to become a national leader in the petrochemical industry. Louisiana has the second largest refining capacity in the country with 19 refineries. Louisiana is ranked second in produced natural gas and third for oil production. Louisiana is also home port for the majority of the vast fleet of supply and work boats that service the oil and gas activities in the Gulf of Mexico.

Louisiana's coastal area has over 3,000 miles of commercially navigable waterways, including 310 miles of the Gulf Intracoastal Waterway (GIWW) which extends from the Mexican Border to Florida. There are 15 locks on these waterways in Louisiana and 9 public shallow water ports (see handout #1). Not only are these waterways used to transport freight, they also provide access to both inland and offshore oil and gas facilities, and the offshore fishing areas.

The petrochemical, oil and gas, fisheries and waterborne commerce industries that contribute to the economic well being of the state and the nation are heavily dependent on the extensive flood control system presently in place in South Louisiana to protect their facilities and supporting infrastructure. So are the 2 million people who live and work in the coastal area.

But these same levees and navigation facilities that greatly benefit both the State's and the nation's economy have been blamed for the rapid deterioration of our coastal wetlands. Also to blame are the oil and gas well access canals and pipeline canals that have sliced and diced the coastal area from one end to the other.

But we shouldn't get obsessed with fixing blame. Without the flood control and navigation facilities it is doubtful we would be here in the first place. And without the industries that have developed because of those flood control facilities, we wouldn't have a reason to stay here. Take away all of

the commerce and industry of the coastal area that is the mainstay of Louisiana's economy, and people would only be there if they enjoyed watching nature and slapping mosquitoes.

The loss of these wetlands is adversely impacting both the area's natural resources and the effectiveness of our hurricane protection system. If the current loss rate of 25-30 square miles per year is allowed to continue unchecked, this situation will have not only massive ecological consequences, but also catastrophic economic ones. Hundreds of miles of pipelines and thousands of wellheads originally constructed in the protection of inland marshes are now becoming exposed to the ravages of the open gulf, which is simply put, a disaster waiting to happen. Large segments of our inland waterway system are fast becoming open coastal shipping routes that will no longer be suitable for inland barge traffic. And levees which were designed to take advantage of the marsh's wave dampening effect will have to be raised significantly just to be able to provide the original design level of protection.

All proposed solutions must take into account the fact that Louisiana's coastal marshes have, since the colonial period, always been a working man's marsh – what Windell Curole calls a "blue collar" marsh. It has been used – and abused – to extract its riches. And today, the thousands of oil and gas wells, and pipelines, need access canals for service and maintenance. The service fleets and the fishing fleets need dependable channels and safe harbors to ride out storms. In short, we can't turn back the clock and return these marshes to a pristine state – we have to work with what we have in place today. Any solution will have to allow the working man access and protection. Anything less that that will be considered unacceptable by the local population.

On the flood control front, we are in the process of developing a continuous line of protection from Morgan City to New Orleans (see handout #2) which we believe will define the final line of defense – the line in the water so to speak – the point from which we will not retreat.

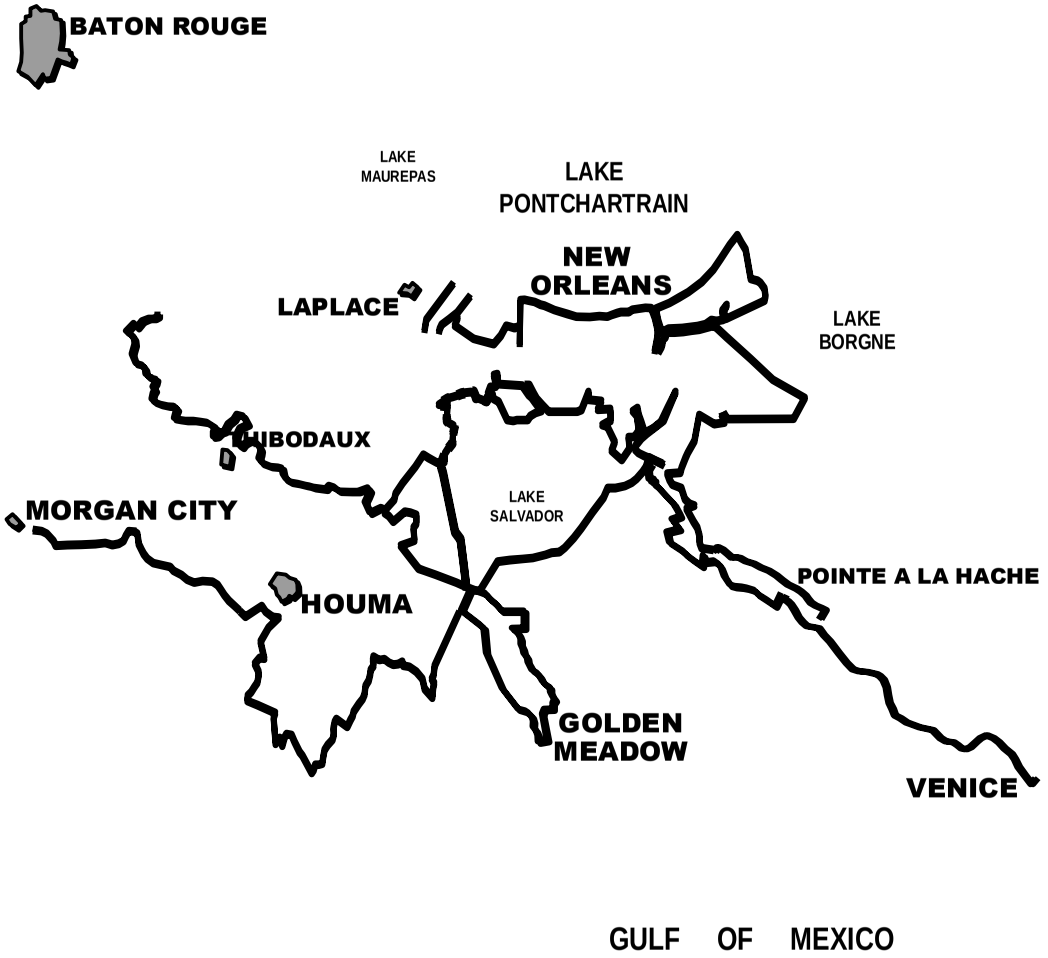
The challenge will be meshing these flood control projects with the coastal restoration initiatives. The two can work in harmony. But it is important to understand that while the flood control efforts can enhance and compliment the coastal restoration efforts and vice versa, neither can substitute for the

other. Consequently, funding for one initiative can not be at the expense of the other. Both must progress simultaneously.

The very magnitude of the combined hurricane protection and coastal restoration undertaking is staggering. But, the alternative – the loss of our environment, our livelihoods and possibly even out lives – is totally unacceptable.

Hurricane Protection, Louisiana

- Barrier Plan Levee Proposed
- Terrebonne Protection Project (Non-Fed) Proposed
- Morganza to the Gulf Levees Proposed
- Donaldsonville to the Gulf Hwy 90 Levee Proposed
- Donaldsonville to the Gulf Bayou Lafourche Proposed
- Donaldsonville to the Gulf Pipeline Canal Levee Proposed
- Donaldsonville to the Gulf GIWW Levee Proposed
- Larose to Golden Meadow Protection Levee
- Davis Pond Levees
- West Bank Hurricane Protection Levees
- Plaquemines Parish Non-Fed Levees
- New Orleans to Venice Hurricane Protection Levees
- Lake Pontchartrain & Vicinity Hurricane Protection Levees
- Bonnet Carré Spillway Levees



WATERWAYS
COUNCIL, INC.
801 North Quincy Street • Suite 200 • Arlington, VA 22203 • (703) 373-2261 • www.waterwayscouncil.org

Louisiana Waterborne Commerce

Louisiana is the top state in the nation for waterborne transportation. The state contains or borders the lower 507 miles of the Lower Mississippi River. Deep draft navigation is possible for the first 236 miles to the Baton Rouge area. The state also includes over 310 miles of the Gulf Intracoastal Waterway (GIWW) system, with over 270 miles to the west of the New Orleans area and about 40 miles to the east. Louisiana also contains major connecting waterways such as the Port Allen-Morgan City Route and Atchafalaya River, which both connect the Mississippi River to the GIWW West. Other major waterways are the Mississippi River Gulf Outlet (MRGO), the New Orleans Inner Harbor Navigation Canal (IHNC), portions of the Mermenteau, Calcasieu, Ouachita, Black, West Pearl and Red Rivers, and numerous lakes, bayous, canals and passes.

Louisiana 2001 Foreign & Domestic Waterborne Commerce
To, From and Within the state
(tonnage in thousands of tons; values in millions of dollars)

Commodity	Shipped	Received	Within	Total	Value
Coal	**10,615**	**20,922**	**1,343**	**32,880**	**$ 1,378**
Petroleum Products	**53,221**	**25,847**	**19,635**	**98,703**	**$ 11,662**
Crude Petroleum	**2,300**	**61,710**	**8,237**	**72,248**	**$ 6,538**
Aggregates	**271**	**12,327**	**16**	**12,615**	**$ 2,220**
Grain	**85,201**	**74,123**	**1,755**	**161,079**	**$ 20,944**
Chemicals	**22,533**	**15,345**	**5,543**	**43,421**	**$ 23,397**
Ores/Minerals	**11,410**	**10,320**	**2,438**	**24,167**	**$ 3,038**
Iron/Steel	**11,592**	**10,586**	**231**	**22,410**	**$ 7,728**
Other	**13,545**	**13,904**	**1,247**	**28,695**	**$ 78,923**
TOTAL	**210,687**	**245,086**	**40,445**	**496,218**	**$ 155,828**

Source: U.S. Army Corps of Engineers Waterborne Commerce Statistics

Louisiana is a major transloading point for commodities between shallow and deep draft barges and deep draft ships. Under the system the Corps of Engineers uses to calculate waterborne tonnage, commodities that arrive in a barge and then leave on a ship are counted twice in the system since there is no direct connection between the two movements.

Waterborne Shipments from Louisiana

Louisiana was the leading state in total waterborne commerce with almost 500 million tons shipped and received. Of this amount, almost 106 million tons were exported. Grain (mostly corn, soybeans and wheat) was about 84 million tons of the exports. Almost all of the grain originated in the Upper Mississippi basin, moved by shallow draft barge to Louisiana docks which eventually loaded the grain to ships. Domestic shipments to other states totaled over 105 million tons with gasoline, fuel oils and other petroleum products making up more than a third.
Louisiana receipts totaled over 245 million tons. Shipments from Louisiana to Florida were mostly gasoline and fuel oils, which moved in ships and deep draft barges. A large portion moved from refineries between New Orleans and Baton Rouge to the Tampa area. A large amount of mostly Ohio River basin coal was shipped to Mississippi River docks below New Orleans, then transloaded and moved onto Florida power plants. As can be seen in the two tables below, about 94% by volume and 80% by value of Louisiana's shipments to Texas depend on the inland waterway system. Shipments to Texas are dominated by fuel oils, gasoline and other petroleum products, along with scrap materials and chemicals. Louisiana also ships products to the Atlantic and Pacific coasts by oceangoing vessels and coastal barges. This traffic includes fuel oils and other petroleum products; sodium hydroxide and other chemicals; and sugar and other agricultural products.

Total Waterborne Shipments from Louisiana to Other States and Countries
(Includes foreign and domestic, both coastal and inland waterway. Values in millions of dollars.)

Shipments To	Commodity		
	Tons	Value	Top
Florida	**27,315,750**	**$ 3,112**	**Gasoline**
Texas	**12,891,530**	**$ 4,996**	**Distillate Fuel Oil**
Illinois	**10,081,079**	**$ 3,420**	**Non-Metal Minerals**
Kentucky	**7,055,502**	**$ 1,319**	**Aluminum Ore**
Ohio	**6,919,409**	**$ 1,393**	**Iron Ore**
Total for All States	**105,095,822**	**$ 58,601**	**Petroleum Products**
Exports to Canada	**1,130,450**	**$ 1,094**	**Residual Fuel Oil**
Exports to Other Countries	**104,460,425**	**$ 15,573**	**Corn**

Source: U.S. Army Corps of Engineers Waterborne Commerce Statistics

Louisiana's inland waterway shipments move to other states throughout the nation's heartland. Total shipments were nearly 75 million tons in 2001, valued at nearly $54 billion. Texas was the leading destination for Louisiana shipments, followed by Illinois. Much of the traffic to Illinois is non-metallic minerals, followed by fertilizers.

Inland Waterway Shipments from Louisiana to other States (*Values in millions of dollars)*			
Shipments To	**Commodity**		
	Tons	**Value**	**Top**
Texas	**12,114,367**	**$ 4,002**	**Distillate Fuel Oil**
Illinois	**10,081,079**	**$ 3,420**	**Non-Metal Minerals**
Kentucky	**7,055,502**	**$ 1,319**	**Aluminum Ore**
Ohio	**6,919,409**	**$ 1,393**	**Iron Ore**
Tennessee	**6,012,132**	**$ 2,217**	**Gasoline**
Total for All States	**74,956,940**	**$ 53,708**	**Petroleum Products**

Source: U.S. Army Corps of Engineers Waterborne Commerce Statistics

Waterborne Receipts by Louisiana

Imports were almost 118 million tons, with nearly 59 million tons of crude petroleum as the top imported commodity. Of the 21 million tons of coal received in Louisiana, about a third was domestic coal that was transloaded and shipped on to Florida. Most of the rest of the coal was moved to Louisiana power plants. Most of this coal arrived by barge from Illinois, Kentucky and West Virginia. Fuel oils and gasoline in shallow draft barges made up most of the commodities moving within Louisiana. Imported iron ore, pig iron and primary iron and steel forms moved by barge from transloading facilities above and below New Orleans to Illinois and Ohio.

Total Waterborne Receipts by Louisiana from Other States and Countries *(Includes foreign and domestic, both coastal and inland waterway. Values in millions of dollars.)*			
Shipments From	**Commodity**		
	Tons	**Value**	**Top**
Illinois	**49,875,312**	**$ 6,846**	**Corn**
Kentucky	**11,680,492**	**$ 1,251**	**Limestone**
Texas	**10,333,256**	**$ 3,687**	**Residual Fuel Oil**
Missouri	**9,245,563**	**$ 1,245**	**Corn**
Iowa	**7,611,933**	**$ 1,322**	**Corn**
Total for All States	**127,507,167**	**$ 48,077**	**Grain**
Imports from Canada	**814,806**	**$ 425**	**Alcohols**
Imports from Other Countries	**116,763,809**	**$ 25,403**	**Crude Petroleum**

Source: U.S. Army Corps of Engineers Waterborne Commerce Statistics

Louisiana received over 122 million tons by inland waterway in 2001. This cargo was valued at over $43 billion.

Inland Waterway Receipts by Louisiana from other States *(Values in millions of dollars)*			
Shipments From	**Commodity**		
	Tons	**Value**	**Top**
Illinois	**49,875,312**	**$ 6,846**	**Corn**
Kentucky	**11,680,492**	**$ 1,251**	**Limestone**
Texas	**9,414,959**	**$ 3,020**	**Residual Fuel Oil**
Missouri	**9,245,563**	**$ 1,245**	**Corn**
Iowa	**7,611,933**	**$ 1,322**	**Corn**
Total for All States	**122,283,538**	**$ 43,223**	**Grain**

Source: U.S. Army Corps of Engineers Waterborne Commerce Statistics

The leading types of grain shipped from Illinois, Missouri, Iowa and Minnesota to Louisiana were corn with over 29 million tons and soybeans at nearly 13 million tons. Over half of the tonnage shipped from Texas was gasoline and fuel oils moving to docks on the Calcasieu and Mississippi Rivers. Kentucky limestone moved from quarries on the Cumberland and Tennessee Rivers to facilities in the Baton Rouge and Lake Charles areas and also to the Red River to be used for riverbank protection.

Inland Waterway Infrastructure in Louisiana

Louisiana has 25 locks on its waterways. The Inner Harbor Navigation Canal Lock (also known as the Industrial Canal Lock) is located just off of the Mississippi River in the New Orleans Industrial Canal. This canal connects the Mississippi River to Lake Pontchartrain, the east portion of the Gulf Intracoastal Waterway (GIWW) and the Mississippi River-Gulf Outlet (MRGO). The current lock was built by nonfederal interests in 1923 and is 640 feet long and 75 feet wide. The new lock will be 1200 feet long and 110 feet wide and will be located just north of the existing facility between the North Claiborne Ave. and Florida Ave. bridges. Construction of a replacement lock was authorized in 1956, although the existing lock was not acquired by the Corps of Engineers until 1986. The estimated cost of the project is more than $600 million. The benefit to cost ratio is 2 to 1. Completion of the project is dependent on funding.

Initial results of a study of seven Gulf Intracoastal Waterway Locks in southern Louisiana indicate that there are immediate needs for capacity increases at Bayou Sorrel and Calcasieu locks. It determined that all the locks are structurally sound, but experience significant delays due to restrictive dimensions. An Interim Feasibility Study on the situation is continuing.

Louisiana Navigation Locks

(tonnage in thousands)					
Lock	**River**	**Mile**	**Year Open**	**Size (ft.)**	**2001 Tonnage**
Berwick	**Atchafalaya**	**1.5**	**1950**	**307 x 45**	**320**
East & West Calumet	**Bayou Teche**	**4.0**	**1950**	**90 x 45**	*****
Jonesville	**Black**	**25.0**	**1972**	**655 x 84**	**1,648**
Calcasieu Barrier	**Calcasieu**	**38.9**	**1968**	**575 x 56**	**946**
Freshwater Bayou	**Freshwater Bayou**	**1.2**	**1968**	**600 x 84**	**3,999**
Harvey	**GIWW**	**0.0**	**1935**	**425 x 75**	**2,091**
Inner Harbor	**GIWW**	**5.6**	**1923**	**640 x 75**	**13,770**
Bayou Boeuf	**GIWW**	**93.3**	**1954**	**1,156 x 75**	**19,825**
Leland Bowman	**GIWW**	**162.7**	**1985**	**1,200 x 110**	**39,120**
Calcasieu	**GIWW**	**238.5**	**1950**	**1,205 x 75**	**38,680**
Algiers	**GIWW Algiers Canal**	**0.0**	**1956**	**760 x 75**	**22,879**
Bayou Sorrel	**Pt Allen – Morgan City Rte.**	**37.5**	**1952**	**800 x 56**	**22,676**
Port Allen	**Pt Allen – Morgan City Rte.**	**64.1**	**1961**	**1,202 x 84**	**24,074**
Catfish Point	**Mermentau**	**25.0**	**1951**	**500 x 56**	**380**
Old River	**Old**	**304.0**	**1963**	**1,200 x 75**	**8,049**
Columbia	**Ouachita**	**117.2**	**1972**	**655 x 84**	**1,224**
Lindy Claiborne Boggs	**Red**	**44.0**	**1984**	**785 x 84**	**2,029**
John H. Overton	**Red**	**74.0**	**1987**	**785 x 84**	**2,063**
3	**Red**	**116.4**	**1992**	**785 x 84**	**628**
4	**Red**	**169.0**	**1994**	**785 x 84**	**422**
Joe D. Waggonner	**Red**	**200.0**	**1994**	**785 x 84**	**398**
Schooner Bayou	**Schooner Bayou**	**3.4**	**1950**	**525 x 75**	**19**
1	**West Pearl**	**29.7**	**1949**	**310 x 65**	*****
2	**West Pearl**	**40.8**	**1950**	**310 x 65**	*****
3	**West Pearl**	**43.9**	**1950**	**310 x 65**	*****

Source: U.S. Army Corps of Engineers Lock Performance Monitoring System 2001 Data and the U.S. Army Corps of Engineers Lock Characteristics General Report * Indicated no commercial tonnage data collected at these locks.

Major Ports in Louisiana

Five port areas in Louisiana were ranked in the top 12 in the United States in 2000. The Port of South Louisiana was the country's busiest, with over 212 million tons shipped and received. This port is defined as Lower Mississippi River (LMR) miles 114.9 through 168.5. This port was the only one in the state with more exports than imports. The Port of New Orleans (LMR miles 81.2-114.9, plus parts of the MRGO, IHNC and Harvey Canal) ranked 4th nationally. The Port of Baton Rouge (LMR miles 168.5-253, plus the Baton Rouge Barge Canal) was 9th and the Port of Plaquemines (LMR miles 0-81.2) was 11th. The state's non-Mississippi River port, Lake Charles, ranked 12th in the U.S. with over 55 million tons shipped and received on the Calcasieu River.

Major Ports in Louisiana (tons in thousands; values in millions)						
Port Name	Tons				Commodity	
	Total	Domestic	Foreign			
			Imports	Exports	Value*	Top
S. Louisiana	212,565	116,884	32,541	63,141	$ 9,994	Corn
New Orleans	85,628	35,332	27,074	23,222	$13,643	Crude Petroleum
Baton Rouge	61,415	40,765	14,219	6,432	$ 3,514	Crude Petroleum
Plaquemines	60,694	37,340	14,931	8,423	$ 3,411	Coal
Lake Charles	52,845	20,925	27,743	4,177	$ 567	Crude Petroleum

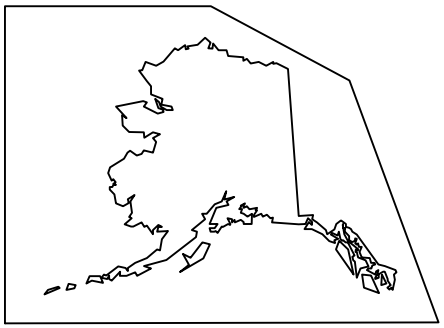
Source: U.S. Army Corps of Engineers Waterborne Commerce Statistics *Value for foreign trade only. Plaquemines estimated as share of New Orleans value. Source: Maritime Administration.

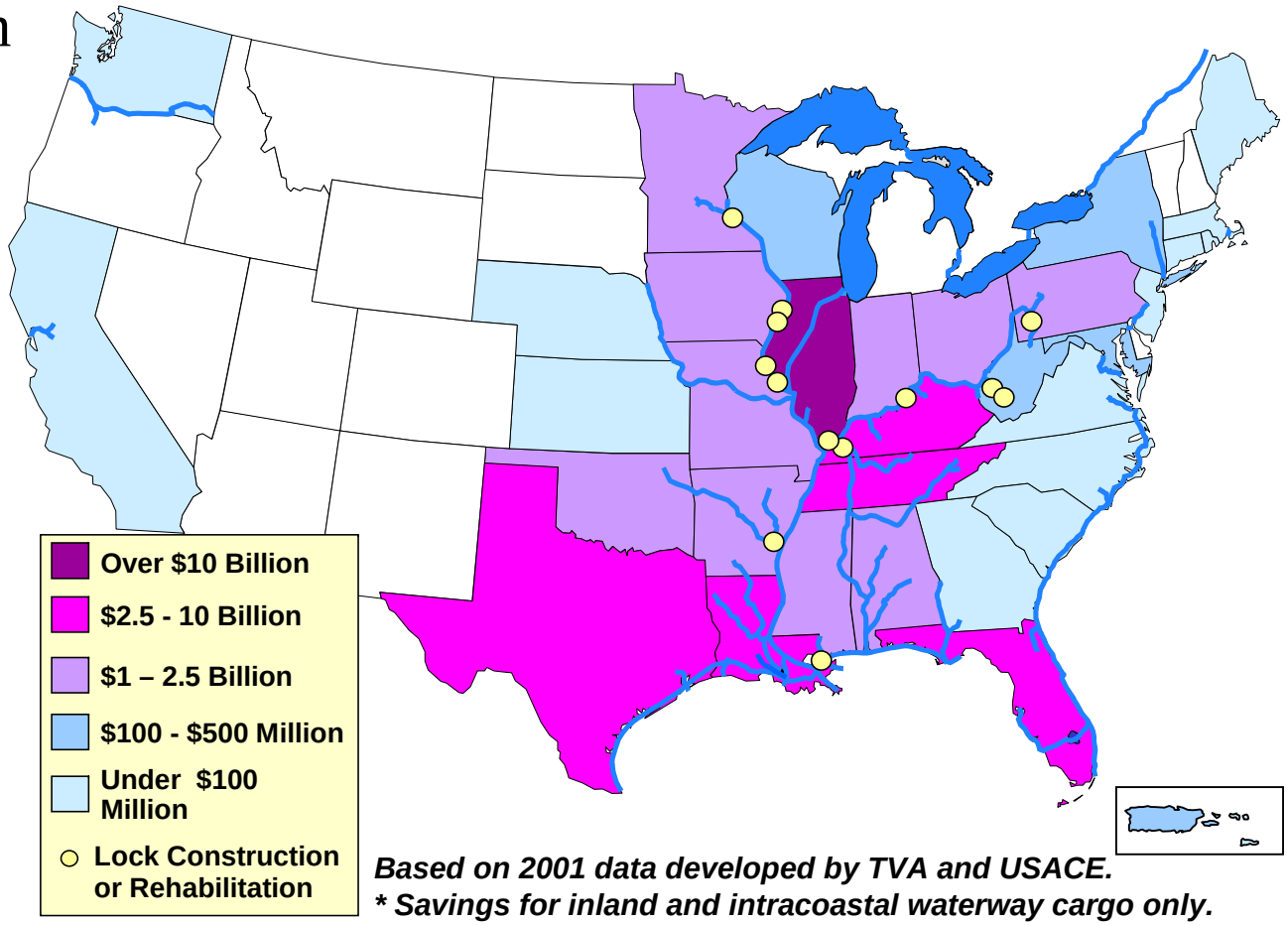

Arkansas
Shreveport
Monroe
Ouachita River
Red River
Texas
Mississippi River
Mississippi
Black River
Louisiana
Atchafalaya River
Baton Rouge
Lake Pontchartrain
W. Pearl River
Calcasieu River
Mermenteau River
Lake Charles
Bayou Teche
Pt. Allen Rte.
Mississippi River
New Orleans
M.R.G.O.
G.I.W.W.
G.I.W.W.


Arkansas
Louisiana
Texas
Mississippi
Joe D. Waggonner L/D
L/D 4
Red River
Columbia L/D
Ouachita River
Jonesville L/D
Black R.
Mississippi River
L/D 3
John H. Overton L/D
L.C.I Boggs L/D
Old River Lock
Atchafalaya River
Port Allen Lock
Lake Pontchartrain
L/D 3
L/D 2
L/D 1
W. Pearl River
Calcasieu River
Mermentau River
Calcasieu Salt Water Barrier
Calcasieu L/D
G.I.W.W.
Leland Bowman L/D
Bayou Teche
Bayou Sorrel
Mississippi River
I.H.N.C. Lock
Calumet
Berwick
Bayou Boeuf
Harvey
M.R.G.O.
Algiers
G.I.W.W.
Catfish Point Lock
Schooner Bayou L/D
Freshwater Bayou L/D

Value of Waterborne Trade Within Louisiana and Between Louisiana and Other States

- Over $113 billion in domestic cargo
- Over $42 billion in foreign trade
- Shipped to or from 35 states or territories
- At average savings of $12.88 / ton*





Based on 2001 data developed by TVA and USACE.

**** Savings for inland and intracoastal waterway cargo only.***